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Clinical effectiveness of mupirocin for preventing S. aureus infections in non-surgical settings: a meta-analysis

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Introduction

A protective effect of mupirocin has been seen among surgical, nonsurgical and dialysis patients. Our aim is to summarize evidence for mupirocin decolonization for prevention of *S. aureus* infections in non-surgical healthcare settings.

Objectives

To identify the optimal setting and patient population to implement mupirocin decolonization for prevention of *S. aureus* infections using meta-analytic methods.

Methods

We conducted systematic searches in PubMed, Cochrane Library Databases, Scopus, Web of Science, and Clinical-Trials.gov to identify papers published until 2013 on effectiveness of mupirocin in healthcare settings. Two investigators independently abstracted data with a pilot-tested form. Risk of bias was assessed using the Cochrane tool. The crude odds ratios were pooled (cpOR) using a random-effects model. Heterogeneity was evaluated using the Woolf's test for homogeneity and I^2 statistics.

Results

Of the 12,644 studies identified, 8 randomized controlled trials and 19 quasi-experimental studies met the study inclusion criteria. Mupirocin was observed to reduce the odds of *S. aureus* infections by 70% (cpOR=0.30, 95% CI 0.23, 0.39) and 60% (cpOR=0.40, 95% CI 0.27, 0.62) in both dialysis and non-dialysis settings, respectively. Nevertheless, there was highly significant (p=0.0009) and moderate heterogeneity (I^2=46%) among studies. Studies were homogeneous (p>0.1) when stratified analyses were performed by specific clinical settings. Among the 6 studies that took place in adult intensive care units (ICUs), mupirocin decolonization was associated with a 56% reduction in the odds of *S. aureus* infection (cpOR=0.44, 95% CI 0.26, 0.73). There was also a protective effect of mupirocin against *S. aureus* exit site infections among patients undergoing peritoneal dialysis (cpOR=0.23, 95% CI 0.15, 0.36) and against bacteremia among hemodialysis patients (cpOR=0.15, 95%CI 0.06, 0.36).

Conclusion

Mupirocin decolonization is protective against *S. aureus* infections among both dialysis and adult ICU patient populations. Future studies should target other patient settings such as long-term care facilities.

Disclosure of interest

None declared.

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